

09/851.462

L-F/207US

Remarks

The Examiner has revised her rejection of the claims under Section 103, by combining the Ziaratti '544 patent with the Critchlow and Kormos patents previously relied upon. Applicant disagrees that the claimed invention is suggested or made obvious by any reference in this combination, or all of the references combined, as elaborated below.

The present claims are directed to an injector system or a method of retrofitting an injector system, in which a "power connection" or "shielded cables" couple power from a "power supply outside [a] shielded room" to the inside of the shielded room, and a "radio frequency filter" is included in the power connection to "reduce radio frequency electrical energy" carried into the room by the power connection.

None of the references cited by the Examiner shows or suggests an injector system or method of retrofitting one, using a radio frequency filter on a power connection carrying power from the outside to the injector inside of a shielded room.

Critchlow discloses a third-generation power injector for use in MR rooms. The previous generation injectors are shown in the '036 patent and '140 patent application noted at paragraph 0038 of the Critchlow specification (see also paragraphs 0009 and 0047). Notably, those two prior generation devices, and the device that is shown in the Critchlow specification, use a battery pack (135 in Critchlow's drawings) to power the injector, and provide control signals to the injector over radio, fiber optic and/or infrared connections. As noted in paragraph 0038 of Critchlow, the control connection is "typically ... by way of a fiber optic cable 140 which

09/851,462

L-F/207US

passes through a tuned port 142 in the wall 144 between the scan room 115 and the control room and provides a communicative link with little or no incoming RF interference."

Thus, in Critchlow, signal connections for an injector are carried into the shielded room from outside the room, but a battery pack is used and thus there is no power connection carrying electrical power into the shielded room, much less a power connection using a RF filter.

Kormos is a 2001 patent, filed in 1997, that relates to the placement of a display terminal in a shielded room of an MRI suite. The disclosure of Kormos is directed to retrofitting of an existing LCD display for this application, which involves, among other steps, removal of the power supply and its large iron-core transformers, and replacement of that power supply with a shielded wire coupled to a "remote power source 32" (col. 6, lines 15-18), which is shown extending outside the room but without any RF filter. The retrofit process also involves reworking the video signal receiving circuitry as described in col. 5, to include a fiber optic receiver 36 that receives red/green/blue video signals over fiber optic lines 44a/44b/44c. These run through a waveguide penetration to a fiber optic transmitter 66 outside the room. In addition, a fiber optic transmitter 34 is incorporated into the LCD housing to transmit infrared control signals received within the shielded room along a fiber optic connection 72 to a fiber optic receiver 70 which provides control signals to the remote workstation.

Thus, in Kormos, signal connections for a video display, and power for the display, are connected from outside a shielded room to inside the shielded room, but there is no disclosure of the power connection having a RF filter.

09/851,462

L-F/207US

Ziaratti is a 1995 patent, which the Examiner has cited for its disclosure of a projector 40 inside a shielded MRI room. Fig. 1 of Zaratti shows that signals are delivered to the projector 40 via a multi-conductor cable 44. As explained in col. 3, these signals pass through a RF filter 45. However, as is plain from Fig. 2, power is not carried through cable 44 but rather is carried through cable 66, which is a separate connection. While cable 66 is described as a shielded cable, there is no illustration of an RF filter on cable 66.

Thus, in Kormos, signal connections for a video display, and power for the display, are on separate connections, and the RF filter 45 is used only for the signal connections in cable 44.

With this background, Applicant submits that the present claims clearly distinguish each and all of the references cited, because none of these references shows or suggests an injector system or a method of retrofitting an injector system, in which a "power connection" or "shielded cables" couple power from a "power supply outside [a] shielded room" to the inside of the shielded room, and a "radio frequency filter" is included in the power connection to "reduce radio frequency electrical energy" carried into the room by the power connection.

Applicant's prior remarks have noted that claims 2 and 3-5 and 7 recite a power connection that is not only carrying power but "further coupling/carrying [] data signals"; Applicant submits this is also a patentable distinction from the cited references, in that none of the cited references shows a combined power and data connection using an RF filter. Applicant notes that the Examiner has taken "official notice" that "it is a well established principle in the art

09/851,462

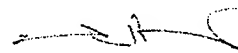
L-F/207US

of electronics that a single cable is preferred over multiple cables to avoid noise". Applicant submits that this is an improper use of "official notice" and is not a proper ground for rejecting claims 2, 3-5 and 7. Specifically, each of Critchlow, Kormos and the newly cited Ziaratti patent show separate power and signal connections, not a combined connection to outside the room. The Examiner cannot take official notice that it is obvious to combine connections, when every reference the Examiner has cited contradicts that assertion by showing separate connections. Applicant submits there is simply no suggestion in any of the cited prior art of carrying control signals along a connection that carries power, as is claimed in claims 2 and 3-5 and 7, and these claims are therefore clearly allowable.

Applicant thus submits that all claims are allowable over the prior art cited, and earnestly requests issuance of a Notice of Allowability.

If any petition for extension of time is necessary to accompany this communication, please consider this paper a petition for such an extension of time, and apply the appropriate extension of time fee to Deposit Account 23-3000. If any other charges or credits are necessary to complete this communication, please apply them to Deposit Account 23-3000.

Respectfully submitted,



Thomas W. Humphrey  
Reg. No. 34,353

Wood, Herron & Evans, L.L.P.  
2700 Carew Tower  
441 Vine Street  
Cincinnati, OH 45202-2917  
Voice: (513) 241-2324 / Facsimile: (513) 241-6234